



KING EDWARD VII SANATORIUM MIDHURST

(FOUNDED BY H.M. KING EDWARD VII IN 1902 WITH FUNDS
PROVIDED BY THE LATE SIR ERNEST CASSEL)

PRESIDENT :
HIS MAJESTY THE KING

THIRTY-SECOND ANNUAL MEDICAL REPORT

JULY 1937 to JUNE 1938

Copies of this report may be obtained on
application to

The Medical Superintendent,
King Edward VII Sanatorium,
Midhurst,
SUSSEX.

Price One Shilling, Post Free.

Telegraphic Address : KING EDWARD VII SANATORIUM.
(One Word)

Telephones : (ADMINISTRATION) MIDHURST 259.
(PATIENTS) MIDHURST 247.



22501344104



KING EDWARD VII SANATORIUM, MIDHURST
South Elevation of Patients' Block



KING EDWARD VII SANATORIUM MIDHURST

(FOUNDED BY H.M. KING EDWARD VII IN 1902 WITH FUNDS
PROVIDED BY THE LATE SIR ERNEST CASSEL)

PRESIDENT :

HIS MAJESTY THE KING

THIRTY-SECOND ANNUAL MEDICAL REPORT

JULY 1937 to JUNE 1938

**WELLCOME
LIBRARY**

Ann Rep

WF28

.B65

K52

1937-38



KING EDWARD VII SANATORIUM

President :

HIS MAJESTY THE KING

Vice-President :

SIR WALTER ROPER LAWRENCE, BART., G.C.I.E., G.C.V.O., C.B.

Chairman of the Council :

SIR COURTAULD THOMSON, K.B.E., C.B.

Council :

SIR JOHN F. H. BROADBENT, Bart., M.D., F.R.C.P. (*Ex Officio*).

THE RIGHT HON. SIR FELIX CASSEL, Bart., K.C.

GENERAL SIR JOHN DU CANE, G.C.B.

SIR PERCIVAL HORTON-SMITH HARTLEY, C.V.O., M.D., F.R.C.P.

SIR WALTER ROPER LAWRENCE, Bart., G.C.I.E., G.C.V.O., C.B.

CAPTAIN NEVILLE LAWRENCE.

BARNETT ALFRED SALMON, ESQ.

SIR COURTAULD THOMSON, K.B.E., C.B.

SIR GEORGE WYATT TRUSCOTT, Bart.

Secretary to the Council :

CAPTAIN ALFRED H. ARNOLD, O.B.E.

Lady Visitor :

MRS. JOHN SCRIMGEOUR.

Hon. Legal Adviser :

SIR REGINALD WARD POOLE, K.C.V.O.

Hon. Auditor :

SIR WILLIAM HENRY PEAT, K.B.E.

Consulting Staff :

SIR JOHN F. H. BROADBENT, Bart., M.D., F.R.C.P. (*Chairman*).

PROFESSOR WILLIAM BULLOCH, M.D., F.R.S. (*Consulting Pathologist*).

SIR MAURICE CASSIDY, K.C.V.O., C.B., M.D., F.R.C.P.

FREDERICK G. CHANDLER, Esq., M.D., F.R.C.P.

PROFESSOR S. LYLE CUMMINS, C.B., C.M.G., M.D.

THE RT. HON. LORD DAWSON OF PENN, P.C., G.C.V.O., K.C.B., K.C.M.G.,
M.D., F.R.C.P.

A. TUDOR EDWARDS, Esq., M.D., M.Chir., F.R.C.S. (*Consulting Surgeon*)
(*Hon. Secretary*).

A. HOPE GOSSE, Esq., T.D., M.D., F.R.C.P.

GEOFFREY MARSHALL, Esq., O.B.E., M.D., F.R.C.P.

JOHN VICTOR SPARKS, Esq., B.A.Cantab., M.R.C.S., L.R.C.P., D.M.R.E.
(*Consulting Radiologist*).

SIR ST. CLAIR THOMSON, M.D., F.R.C.P., F.R.C.S. (*Consulting*
Laryngologist).

ROBERT A. YOUNG, Esq., C.B.E., M.D., F.R.C.P.

Honorary Surgeon :

ARTHUR H. BOSTOCK, Esq., M.R.C.S., L.R.C.P.

Dental Surgeon :

LEONARD MONTAGUE FLEETWOOD, Esq., L.D.S., R.C.S.

Medical Superintendent :

GEOFFREY S. TODD, Esq., M.B., Ch.M., M.R.C.P.

Assistant Medical Officers :

LEONARD R. WEST, Esq., M.B., B.S. Adelaide, M.R.C.P.

A. STANLEY HERINGTON, Esq., M.A., M.B., B.Chir.

PHILIP W. MORSE, Esq., B.A., B.M., B.Chir.

Resident Pathologist :

KENNETH FRANCIS WAKEFIELD HINSON, Esq., M.R.C.S., L.R.C.P.

Matron :

MISS CHARLOTTE P. A. QUAYLE.

Chaplain :

REV. JOHN H. LAYTON, A.K.C.

KING EDWARD VII SANATORIUM MIDHURST

Thirty-second Annual Medical Report JULY 1937 to JUNE 1938

DURING the period July 1st, 1937, to June 30th, 1938, 229 patients were admitted to the Sanatorium, 56 of these being re-admissions.

During the same period, 224 patients were discharged, and 3 died in the Sanatorium. Of those discharged, 6 were in the Sanatorium less than nine weeks, and are not followed up in the after-history records, and 56 were re-admissions who are considered in a later section of the Report. The remaining 162 patients were grouped according to condition on admission, as follows :—

Group I ...	...	...	...	...	26
Group II	...	...	...	...	102
Group III	...	...	...	...	29
Group IV	...	...	...	...	5

(Details of the classification will be found on page 9.)

It will be noticed that the number of discharges during the year shows a large decrease on previous years. This is entirely due to more cases having surgical treatment of a major kind, and thus their stay is prolonged. However, the percentage of those discharged with disease arrested or much improved has risen considerably, which fully justifies the extra stay of these patients. The average length of stay was six months.

Applications for particulars of admission totalled 428, and the average waiting list was 31–32 for men and 29–30 for women—an increase in both cases.

Thirty-three applicants were examined by the Medical Superintendent ; of these 29 (87.9 per cent) were accepted for treatment, and 4 (12.1 per cent) were rejected as unsuitable, according to the rules of the Sanatorium.

We would like to place on record our grateful thanks to Sir Edward Meyerstein for providing a television set. This is installed in the lounge, and owing to the excellent reception, is well patronised in the evenings. It is also possible for the patients to follow the tennis championships at Wimbledon, and other outdoor events.

We are also greatly indebted to Miss Florence A. Tingey for her gift of an electrical clock. This has been placed on the front elevation of the building, and is of great value.

Once again we were able to make further improvements in the talking picture programmes, which are very popular with the patients. During the whole of the time that they have been shown there has been a high attendance, and all the programmes have been much appreciated.

As last year, concerts and plays were given at fortnightly intervals. These proved a success, especially the two given by the Staff. The patients look forward greatly to the latter, as they generally contain matters of topical interest.

Other entertainments in the form of bridge drives, whist drives, competitions and tournaments were, as usual, organised by the patients' General Purposes Committee. Needlework classes were held as previously.

The shop continued to do excellent business, and continual efforts are made to increase its manifold services.

With the invaluable assistance of the Times Club Book Club, the Library is kept up-to-date by frequent additions of recent books.

The Church Services were held as usual on Sundays, with extra services on special occasions, such as Armistice Day. Holy Communion is celebrated weekly, when the Chaplain takes the Sacrament to patients in bed. Attendances have improved since the appointment of a resident Chaplain.

A Roman Catholic priest visits the Sanatorium regularly to see the Catholic patients, and serves Mass at frequent intervals. The Catholic members of the Staff also attend, and are thus saved a long journey to the village.

We wish to thank the Council and Consulting Staff for their valuable services and unfailing interest in the organisation and welfare of the Sanatorium.

Our sincere thanks are also given to all members of the Staff in the Sanatorium for their work and loyal co-operation.

GENERAL STATISTICS

The following tables show an analysis of the 162 new patients discharged during the year, under the following headings :—

- (1) Place of Residence.
- (2) Occupation.
- (3) Age and Sex.
- (4) Married or Single.
- (5) Mode of Onset of Disease.
- (6) Duration of Disease.

TABLE I—PLACE OF RESIDENCE

Place of Residence	Number of Patients	Place of Residence	Number of Patients
London	45	Norfolk	2
Irish Free State	17	Worcestershire	2
Surrey	15	Bedfordshire	1
Kent	10	Berkshire	1
Middlesex	10	Burma	1
Sussex	9	Cambridgeshire	1
Devon	8	Channel Islands	1
Essex... ..	6	Derbyshire	1
Lancashire	6	Jamaica	1
Hampshire	4	Kenya	1
Yorkshire	3	Nottinghamshire	1
Wales	3	Northern Ireland... ..	1
Buckinghamshire	2	Oxfordshire	1
China... ..	2	Scotland	1
Cornwall	2	Spain	1
Hertfordshire	2	Somerset	1
			162

TABLE II—OCCUPATION

Occupation	Number of Patients	Occupation	Number of Patients
Housewives	26	Civil Servants	2
Clerks	20	Artists	2
Students	11	Actors	1
Nurses	9	Air Force	1
Nil	8	Builders	1
Managers	6	Clergymen	1
Commercial Travellers	6	Farmers	1
Medical Practitioners	6	Hairdressing Instructors	1
Accountants	5	Insurance Brokers	1
Engineers	5	Lecturers	1
Shopkeepers	4	Librarians... ..	1
Shop Assistants	3	Master Bakers	1
Army... ..	3	Pharmacists	1
Company Officials	3	Stock Jobbers	1
Navy	3	Surveyors	1
Salesmen	3	Tea Planters	1
Solicitors	3	Town Clerks	1
Teachers	3	Dental Surgeons	1
Secretaries	3	Film Artists	1
Agents	2	Journalists	1
Bank Officials	2	School Matrons	1
Manufacturers	2	Social Workers	1
Tailors	2		162

TABLE III—AGE AND SEX

Years						Males	Females	Total
Under 20	...	...	...	...	...	6	3	9
20-25	...	...	...	...	...	19	15	34
26-30	...	...	...	...	...	16	22	38
31-35	...	...	...	...	...	19	10	29
36-40	...	...	...	...	...	16	7	23
41-45	...	...	...	...	...	10	5	15
46-50	...	...	...	...	...	7	4	11
Over 50	...	...	...	...	...	2	1	3
						95	67	162

TABLE IV

Married	...	...	69
Single	...	...	93
			162

TABLE V—MODE OF ONSET

Mode of Onset						Number of cases	Percentage
Lassitude	...	...	...	...	...	39	24.1
Cough	...	...	...	...	...	38	23.4
Hæmoptysis	...	...	...	...	...	21	13.0
“ Influenza ”	...	...	...	...	...	19	11.7
Pleurisy	...	...	...	...	...	13	8.0
Loss of Weight	...	...	...	...	...	3	1.9
Other Modes	...	...	...	...	...	29	17.9
						162	100.0

TABLE VI—DURATION OF DISEASE

Average Duration	...	...	1 year 8 months
Extremes	...	...	2 months-15 years

TABLE VII—GENERAL RESULTS OF TREATMENT AS SHOWN BY THE
CONDITION OF THE PATIENTS ON ADMISSION AND ON DISCHARGE
FROM THE SANATORIUM DURING THE YEAR 1937–38

Group on Admission	Number of Cases	Arrested	Much Improved	Improved	Stationary or Worse	Died in Sanatorium
IA ...	22	22	—	—	—	—
IB ...	4	3	1	—	—	—
IIA ...	40	33	7	—	—	—
IIB ...	62	32	23	5	2	—
IIIA ...	4	2	—	—	2	—
IIIB ...	28	1	6	13	5	3
All Cases	160	93	37	18	9	3
IV { Patients in whom no definite evidence of Pulmonary Tuber- culosis was found }		5				

In the above table A denotes Negative Sputum, B Positive.

Once again, the percentage of cases discharged with “Disease arrested” has increased, namely, from 50 per cent to 56 per cent. This again must be ascribed to the more numerous forms of active treatment being pursued, especially on the surgical side. Group IV cases have further diminished; this is due in great measure to the long waiting list, allowing time for a specific diagnosis of tuberculosis to be made before admission.

GROUPS.—As in previous Annual Reports, the Turban-Gerhardt classification has been used to indicate the clinical condition of patients on admission. This classification, based on physical signs, is as follows :—

Group I.—Disease of slight severity, limited to small areas of one lobe on either side, which, in the case of affection of both apices, does not extend beyond the spine of the scapula or the clavicle, or, in the case of affection of the apex of one lung, does not extend below the second rib in front.

Group II.—Disease of slight severity, more extensive than Group I, but affecting at most the whole of one lobe; or severe disease extending at most to the half of one lobe.

Group III.—All cases of greater severity than Group II, and all those with considerable cavities.

By “disease of slight severity” is to be understood: disseminated foci characterised by slight dullness, indefinite rough or weak vesicular or broncho-vesicular breathing, and fine medium crepitations.

By “severe disease” is meant massive infiltration, recognised by dullness, broncho-vesicular or bronchial breathing, with or without crepitations.

Cases with signs of considerable excavation, giving rise to tympanitic percussion with amphoric or cavernous breathing and numerous coarse consonating rales come under Group III.

Pleuritic dullness, if only of slight extent, is to be left out of account ; if it is considerable, pleuritis should be specially mentioned under tuberculous complications.

The following terms are used to describe the condition of patients on discharge from the Sanatorium :—

“ *Disease Arrested.*”—General health completely restored in every respect, without any sign of disease of the lungs except such as is compatible with a completely healed lesion ; sputum, if still present, free from tubercle bacilli.

“ *Improved.*”—General health improved, but not restored ; physical signs of disease in the lungs still present, though less marked than on admission.

“ *Stationary.*”—No appreciable improvement in the condition of the lungs or in the general health.

“ *Worse.*”—General or local condition worse.

TABLE VIIIA—DEMONSTRATION OF T.B. IN SPUTUM

<i>On Admission</i>					<i>On Discharge</i>				
Positive	...	...	...	90	Positive	...	...	...	37
Negative	...	...	...	44	Negative	...	...	...	80
No Sputum	...	...	...	23	No Sputum	...	...	...	40
Group IV	...	...	...	5	Group IV	...	...	...	5
				162					162

In 47 cases, sputum which was T.B. positive on admission was negative on discharge ; in 7 such cases, sputum cleared up completely. In 13 cases, sputum which was T.B. negative on admission, cleared up completely. Thus, sputum condition improved in 67 cases.

A noteworthy result of the year's work is that the percentage of cases discharged with positive sputum is considerably lower than last year, namely, 23 per cent as compared with 32 per cent. Of course, the ideal would be that no case with positive sputum should be discharged from the Sanatorium, but this is completely impossible. All positive cases are given thorough instruction in precautions against infecting others, and many of them remain locally, attending as out-patients, and not returning home until their sputum has become negative or dried up. This enables us to admit many more active cases into the Sanatorium who need immediate treatment, as otherwise the waiting list would be blocked to an even greater extent than it is at present.

Cases are not regarded as negative until cultural tests have been made in addition to the microscopical examination of the sputum.

TABLE VIIIb—ANALYSIS ACCORDING TO TREATMENT OF SUCCESSFUL SPUTUM RESULTS, 1937-38

Treatment	T.B. Positive to Negative	T.B. Positive to Nil	T.B. Negative to Nil	Total
Artificial Pneumothorax ...	17	4	2	23
Routine	12	1	8	21
Sanocrysin	7	1	1	9
A.P. and Phrenic	4	—	—	4
A.P. and Sanocrysin	—	1	1	2
Sanocrysin and Phrenic	2	—	—	2
Thoracoplasty	—	—	1	1
Phrenic Evulsion	1	—	—	1
A.P. and Thoracoplasty	1	—	—	1
Phrenic and Thoracoplasty	1	—	—	1
A.P., Phrenic and Sanocrysin	1	—	—	1
Extra- and Intrapleural A.P. and Sanocrysin	1	—	—	1
	<u>47</u>	<u>7</u>	<u>13</u>	<u>67</u>

TABLE IX—WEIGHT

Weight	Group I	Group II	Group III	Group IV	Total
Gained	20	82	17	3	122
Lost	4	13	5	2	24
No Change	2	6	—	—	8
Not Weighed	—	1	7	—	8
	<u>26</u>	<u>102</u>	<u>29</u>	<u>5</u>	<u>162</u>

RE-ADMISSION CASES

Of the 224 patients discharged, 56 were re-admission cases, as compared with 36 last year and 52 the year before. The following table compares the clinical condition of these cases on their previous discharge with that on their re-admission.

TABLE I

Group	Number of Cases	
	On Previous Discharge	On Re-admission
Group I	9	5
Group II	29	32
Group III	17	19
Group IV	1	—
	<u>56</u>	<u>56</u>

As in previous years, many of them returned for further treatment of an active kind, as specified below :—

Artificial Pneumothorax—

Continued from previous treatment	...	...	6
Induced between discharge and re-admission...			3
Induced after re-admission	...	...	6
Bilateral	...	...	1
Sanocrysin (including 2 after thoracoplasty performed elsewhere)	...	...	5
Phrenic Evulsion	...	...	2
A.P. and Phrenic Evulsion	...	...	2
Extrapleural Pneumothorax—			
Before re-admission	...	...	1
In Sanatorium	...	...	1
Attempted	...	...	1
Thoracoplasty	...	...	4

The remaining 24 returned for further routine treatment. In most cases, this was due to breakdown owing to excessive activity after discharge. Of the re-admissions, 41 left with disease arrested or much improved; this emphasises the value of careful routine in the life of patients suffering from pulmonary tuberculosis, for as soon as they return to the discipline of a sanatorium they once again improve.

TABLE II—GENERAL RESULTS OF TREATMENT OF RE-ADMISSION CASES

Group	Arrested	Much Improved	Improved	Stationary or worse	Died in the Sanatorium	Total
I ...	3	2	—	—	—	5
II ...	12	16	3	—	—	31
III ...	4	8	2	5	—	19
IV ...	—	—	—	—	—	—
All Cases ...	19	26	5	5	—	55

Admitted for one week to have phrenic evulsion	...	...	...	...	1
					56

REPORT OF THE THROAT DEPARTMENT

Of the 224 patients discharged during the year, the larynx of 217 was examined by Sir St. Clair Thomson. Definite tuberculous disease was present in 14 cases, as compared with 11 last year, while the larynx in the remaining 203 cases was found to be normal.

Three cases were treated with galvanocautery, and all were discharged with disease arrested. Six cases were put on silence and 6 on whispers.

Of the 14 patients suffering from disease of the larynx, 2 were thoracoplasty cases, 2 artificial pneumothorax, and 1 artificial pneumothorax and phrenic evulsion combined.

One case of tuberculosis of the ear was found, who was discharged with disease improved.

TABLE I—SHOWING THE RESULT ON DISCHARGE OF TREATMENT IN PATIENTS SUFFERING FROM TUBERCULOSIS OF THE LARYNX IN WHOSE SPUTUM TUBERCLE BACILLI WERE DEMONSTRATED IN THE SANATORIUM.

Classifica- tion	Number of Cases	Arrested	Much Improved	Improved	Stationary or worse	Remarks
Group I ...	—	—	—	—	—	2 since died 1 since died
Group II ...	7	4	—	—	3	
Group III ...	4	—	1	2	1	
Total ...	11	4	1	2	4	

TABLE II—SHOWING THE RESULT ON DISCHARGE OF TREATMENT IN PATIENTS SUFFERING FROM TUBERCULOSIS OF THE LARYNX IN WHOSE SPUTUM TUBERCLE BACILLI WERE NOT DEMONSTRATED IN THE SANATORIUM.

Classifica- tion	Number of Cases	Arrested	Much Improved	Improved	Stationary or worse	Remarks
Group I ...	—	—	—	—	—	
Group II ...	2	1	—	1	—	
Group III ...	1	—	—	—	1	
Total ...	3	1	—	1	1	

Note by Sir St.Clair Thomson.—The complication of tuberculosis in the larynx is being met with less frequently. Twenty years ago, in 1918, it was found in 14.4 per cent of the patients ; in 1928, in 8.3 per cent ; and in 1938, in 6.5 per cent. This may indicate that we are now getting cases in an earlier stage of the disease (when the complication occurs less frequently), or that tuberculosis is becoming of a less virulent type.

ARTIFICIAL PNEUMOTHORAX

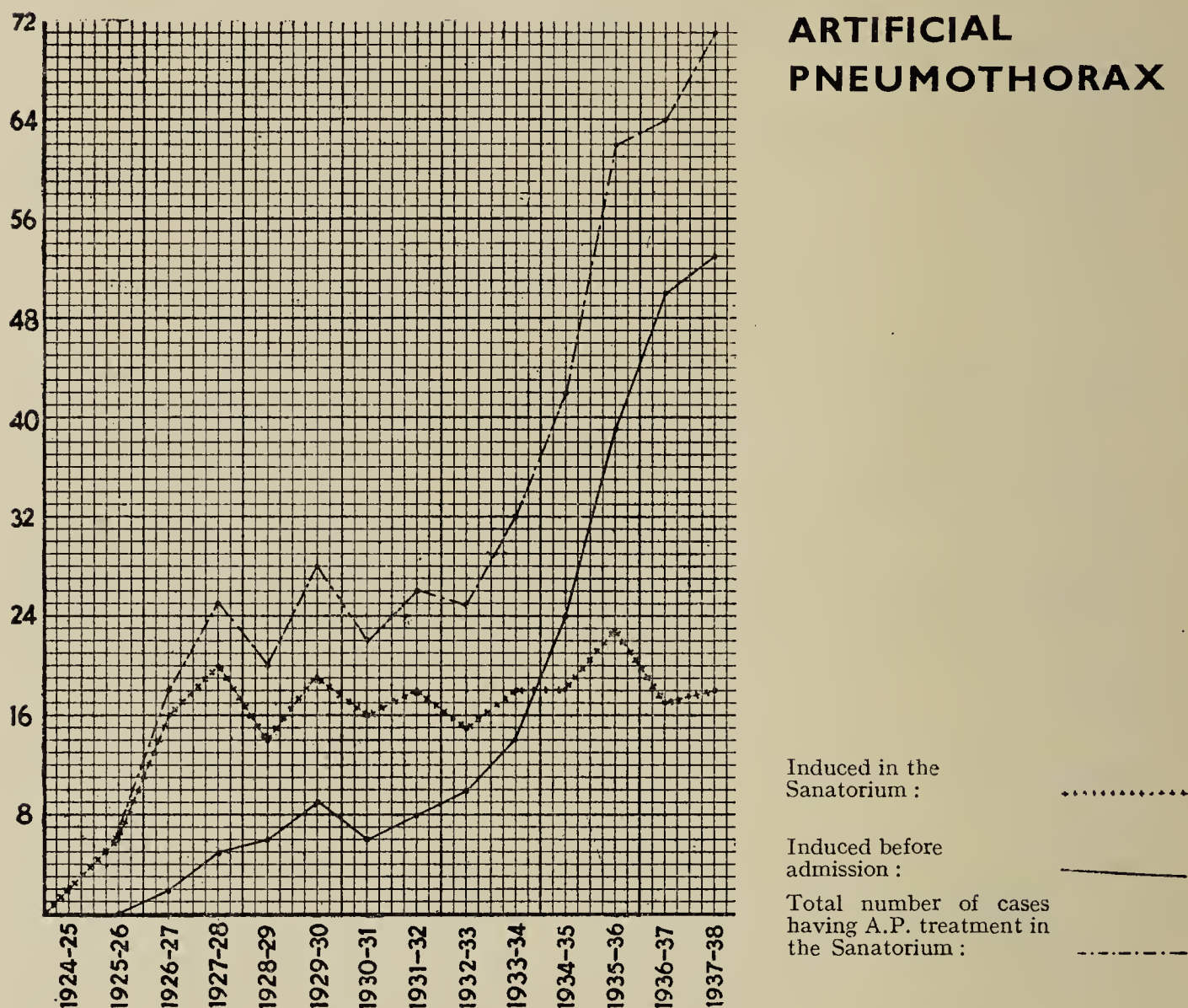
During the period 1925–37 artificial pneumothorax was attempted in 259 cases, of which 202 were successful.

Of these 202 patients, 143 (70.8 per cent) are known to be alive. Particulars of sputum are known in 117 cases, and are analysed as follows :—

TABLE I

	No Sputum	T.B. Negative	T.B. Positive	Sputum not Tested	Total
Ceased Refills ...	59	5	4	14	82
Continuing Refills ...	19	7	2	7	35
	78	12	6	21	117

The total number of patients receiving artificial pneumothorax treatment during the year under review was 71. We again show the annual figures graphically.



Once more we would like to draw attention to the fact that the number of artificial pneumothoraces induced in the Sanatorium—namely, 18—appears to be very small. This is entirely due to the length of the waiting list. In 53 cases, tabulated below, the artificial pneumothorax was induced before admission in another institution, either on our advice or on that of some other consultant. Thus they received treatment without a delay which might have proved extremely harmful.

All cases have been grouped as follows :—

Choice I.—Cases with involvement of not more than half of one lung, with signs of activity.

Choice II.—Cases in which the whole of one lung is affected, or the upper half of one, with slight infiltration in the other.

Choice III.—Cases with bilateral disease, but with a possibility of benefit by a limited pneumothorax on the more active side. Cases *in extremis*, e.g., with hæmoptysis.

TABLE II—AN ANALYSIS OF CASES IN WHICH ARTIFICIAL PNEUMOTHORAX WAS SUCCESSFULLY INDUCED IN THE SANATORIUM

Classification	Larynx Improved	Sputum on Admission		Sputum on Discharge	
		No Sputum or T.B. Negative	T.B. Positive	No Sputum or T.B. Negative	T.B. Positive
Choice I ...	—	2	3	3	2
Choice II ...	1	1	9	7	3
Choice III ...	—	2	1	2	1
All Cases ...	1	5	13	12	6

TABLE III—ANALYSIS OF CASES IN WHICH ARTIFICIAL PNEUMOTHORAX WAS SUCCESSFULLY INDUCED BEFORE ADMISSION

Sputum before induction of A.P.		Sputum on Discharge	
No Sputum or T.B. Negative	T.B. Positive	No Sputum or T.B. Negative	T.B. Positive
11	39	45	5

Abandoned after admission 1
Died in Sanatorium ... 2

SANOCRY SIN

The after-history of the 298 cases who had gold treatment in previous years shows that 78 are now dead, while of the remaining 220, 207 are known to be alive. Particulars of sputum are known in 173 cases, as follows :—

No sputum ...	...	...	...	...	...	81
T.B. Negative ...	...	...	...	...	...	24
T.B. Positive ...	...	...	...	...	...	15
Sputum not tested ...	...	...	...	...	...	53
						173

28 cases have been treated with sanocrysin during the year under review, as compared with 58 last year. One case was re-admitted for a second course.

It is always extremely difficult to assess the value of this drug in the treatment of pulmonary tuberculosis. We specially select for gold therapy some of the more chronic positive cases, particularly choosing cases with scattered fibrotic lesions, cases with an artificial pneumothorax who have some disease on the opposite side, and cases who have recently undergone thoracoplasties.

We still favour small doses, and consider it extremely important to test the urine the day before and the day after injection. Even if a trace of albumen is found in the urine, we consider that sanocrysin should be stopped. Following this course, we have not had one case of serious complication following the giving of this drug during the year under consideration.

The following table compares the results of sputum examination on admission and discharge :—

Group	On Admission			On Discharge		
	No Sputum	T.B. Negative	T.B. Positive	No Sputum	T.B. Negative	T.B. Positive
I ...	—	—	—	—	—	—
II ...	1	1	20	4	11	7
III ...	—	—	7	—	1	6
Total ...	1	1	27	4	12	13

SURGICAL DEPARTMENT

The theatre continues to prove invaluable in the work of the Sanatorium. Numerous items of equipment have been added, including a diathermy table and a lighted dissector for extrapleural pneumothoraces. Quite a number of instruments have had to be replaced by later patterns, as in chest surgery the types of instrument are continually changing.

The following table shows the nature of the 98 major operations :—

Thoracoplasty	...	...	...	...	...	19
					(on 10 cases)	
Extrapleural pneumothorax	...	...	...	...	...	11
Extra- and intrapleural pneumothorax	...	...	...	...	...	9
Attempted extrapleural pneumothorax	...	...	...	...	...	2
Phrenic evulsion	...	...	...	...	...	9
Phrenic crush...	...	...	...	...	...	5
Thoracoscopy and division of adhesions	...	...	...	...	...	31
Thoracoscopy...	...	...	...	...	...	5
Other operations	...	...	...	...	...	7
						—
						98
						==

The main alteration in the Department this year has been the substitution of extrapleural pneumothorax in quite a number of cases who would otherwise have had an apical thoracoplasty. As this is the first year that we have done extrapleural pneumothoraces at Midhurst, we describe our technique in detail.

The operation may fall into one of two classes :—

(1) The extrapleural pneumothorax alone, done in cases in which intrapleural pneumothorax has been attempted and found to be impossible.

(2) The extrapleural combined with an intrapleural pneumothorax, done in cases in which an intrapleural pneumothorax has been possible in the lower half of the lung, but in which the apex was adherent or the adhesions in this region were so numerous that their division by cauterisation was impossible. In this latter class we have, as a matter of routine, made the extra- and intrapleural pneumothoraces into one on the day of the operation.

CLASS I—EXTRAPLEURAL PNEUMOTHORAX ALONE

With the exception of three cases, the operations have been done under gas and oxygen anæsthesia, after preliminary pentothal, given intravenously. A section of the fourth rib is removed, and the parietal pleura dissected from its surrounding fascia. The wound is never closed up until we are quite certain that all bleeding and oozing points have been thoroughly controlled. It is extremely important that each layer should be well sewn up, in order to prevent, as far as possible, any leakage of air. The case is filled on the table at the conclusion of the operation. Another refill is given the same night ; a second refill is given the next morning, and then daily for at least ten days, even if the amount of air taken does not exceed 50 cc. Fluid, if formed in any quantity, is gas-replaced at once. X-ray Examinations are made every second day for the first ten days, as we consider that it is otherwise impossible to assess (1) the amount of effusion, (2) the degree of collapse. Also, one can guard against excessive stripping by high pressures of air. After ten days, we refill them every second day, keeping them under screen control, and gradually increase the interval until five days are reached. We always refill in front, if possible, after the first given on the table ; we consider that there is less risk of infecting the patient than when given through the wound. We continue anterior refills throughout the period of after-care.

CLASS II—COMBINED EXTRA- AND INTRAPLEURAL PNEUMOTHORAX

The technique of the operation is the same until the apex has been separated and the junction between the extra- and intrapleural pneumothoraces seen. These are then broken into one, and the technique is continued as before. The after-care varies greatly from that described above. A refill is given on the table, but another will probably not be necessary for two or three days. Several pictures by portable X-rays are taken as before, and should the lung show any signs of re-expanding, a refill is given at once. After two or three weeks, they once again become ordinary pneumothorax cases as regards refills, and are filled at whatever intervals are necessary, judged by screen control.

It will be noted that we have done nine of this type ; every one of them has been a success, though, of course, we cannot as yet describe the ultimate results. We cannot share the opinion of some doctors that this

is a dangerous and unsuccessful operation. If a case has had a lower artificial pneumothorax with an adherent apex, we think it quite wrong treatment to allow the lower artificial pneumothorax to obliterate before commencing the extrapleural pneumothorax. The combined case is very much easier to control than the limited extrapleural.

We show a series of X-rays of a case from each class (Cases I and II).

RESULTS.

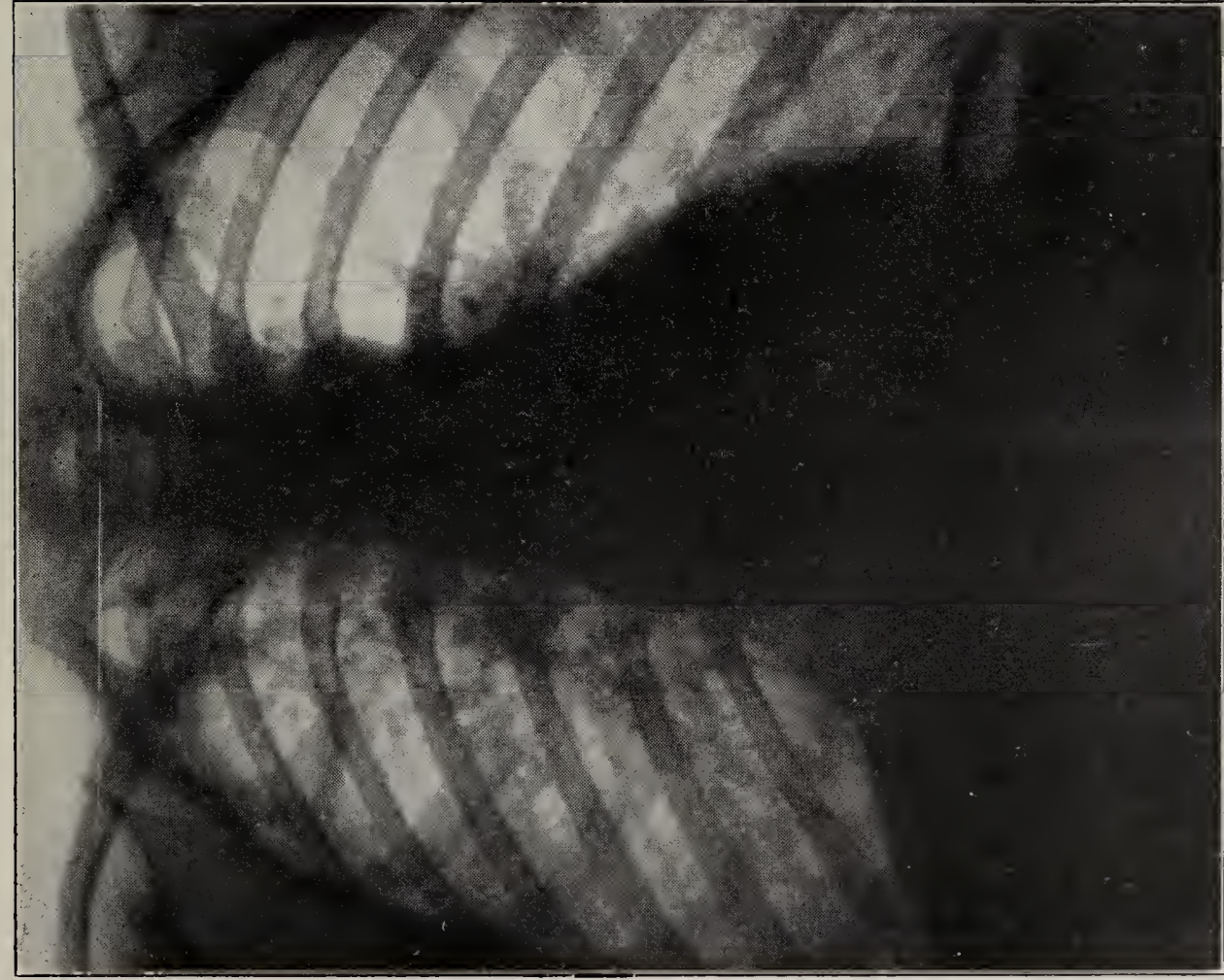
The figures given earlier in this section refer to operations actually performed in the theatre during the year under review, whereas the following tables, showing results, refer to cases discharged from the Sanatorium during this period. As only three extrapleural pneumothorax cases were discharged, we are not showing results of this operation in this Report. We are at present engaged in getting together the statistics of all the operations performed in the theatre, which we hope to publish separately soon. More particulars of after-results will then be available, as we shall have done many more of both classes.

PHRENIC OPERATIONS

Group			Blood Sedimentation Rate		Sputum	
			Before Operation	After Operation	Before Operation	After Operation
			Per cent	Per cent		
II	...	...	8	7	T.B. Positive	T.B. Positive
II	...	...	20	5	No sputum	No sputum
II	...	...	44	4	T.B. Positive	T.B. Negative
II	...	...	43	8	T.B. Positive	T.B. Negative
II	...	...	32	4	T.B. Positive	T.B. Negative
II	...	...	11	3	T.B. Positive	T.B. Negative
II	...	...	22	4	T.B. Positive	T.B. Negative
II	...	...	6	3	T.B. Positive	T.B. Negative
II	...	...	28	18	T.B. Positive	T.B. Positive
II	...	...	In Sanatorium one week only			
III	...	...	25	25	T.B. Positive	T.B. Positive
III	...	...	53	10	T.B. Positive	T.B. Negative
III	...	...	8	35	T.B. Positive	T.B. Positive
III	...	...	40	62	T.B. Positive	T.B. Positive

THORACOPLASTY OPERATIONS

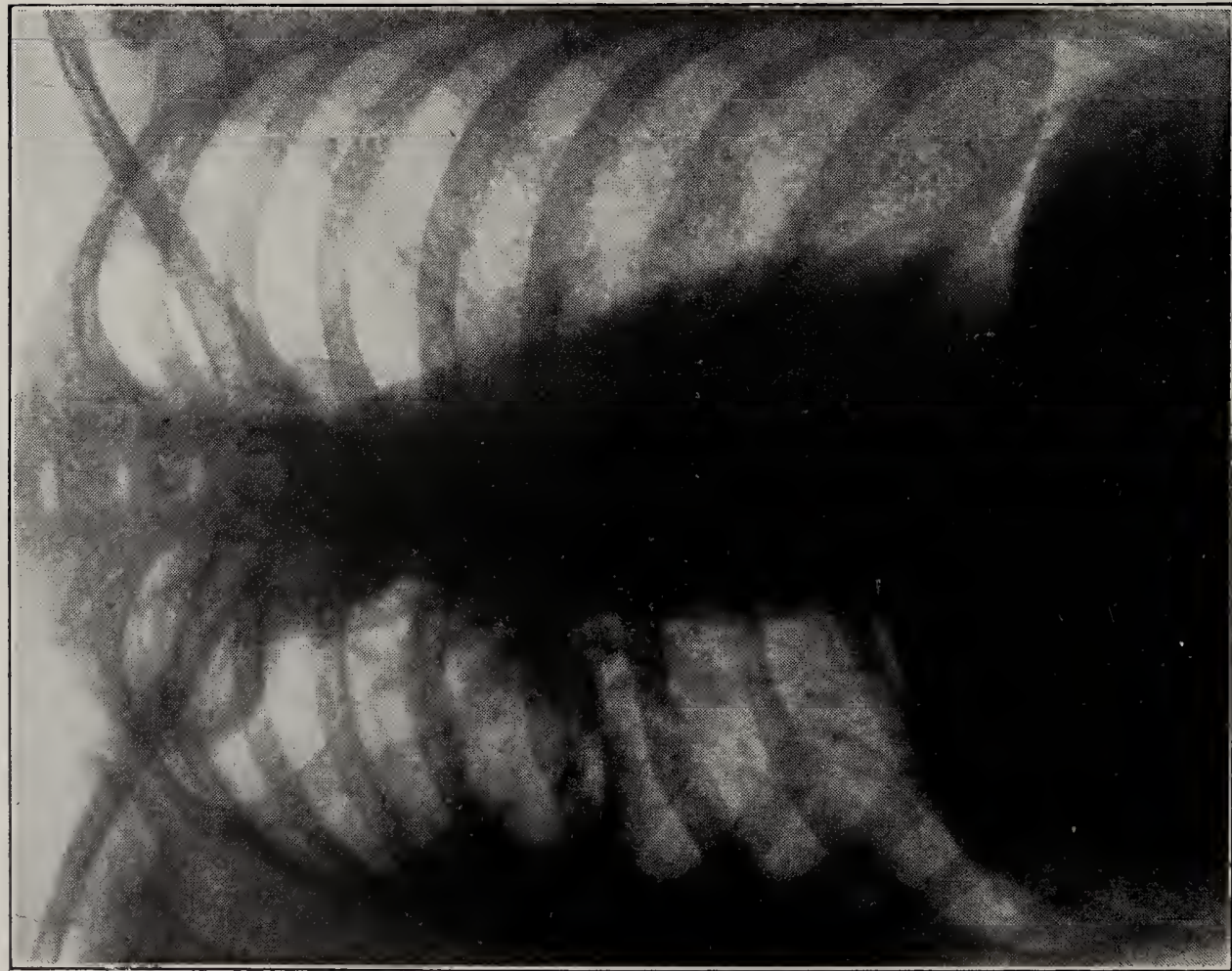
Group		Blood Sedimentation Rate		Sputum		Working Capacity	
		Before Operation	After Operation	Before Operation	After Operation	Before Operation	After Operation
II	...	12	2	T.B. Positive	T.B. Negative	Up all day	Full-time work
II	...	8	2	T.B. Positive	T.B. Positive	Up to lunch and tea	Normal life
II	...	6	9	T.B. Positive	T.B. Negative	In bed	Normal life
II	...	6	1	T.B. Positive	T.B. Positive	Up all day	Full-time work
II	...	6	5	T.B. Positive	T.B. Positive	Up to tea	Normal life
III	...	47	7	T.B. Positive	T.B. Negative	Up to tea	Normal life
III	...	53	10	T.B. Positive	T.B. Negative	Up to lunch and tea	Normal quiet life



CASE I
FIG. 1—Showing Large Apical Cavity

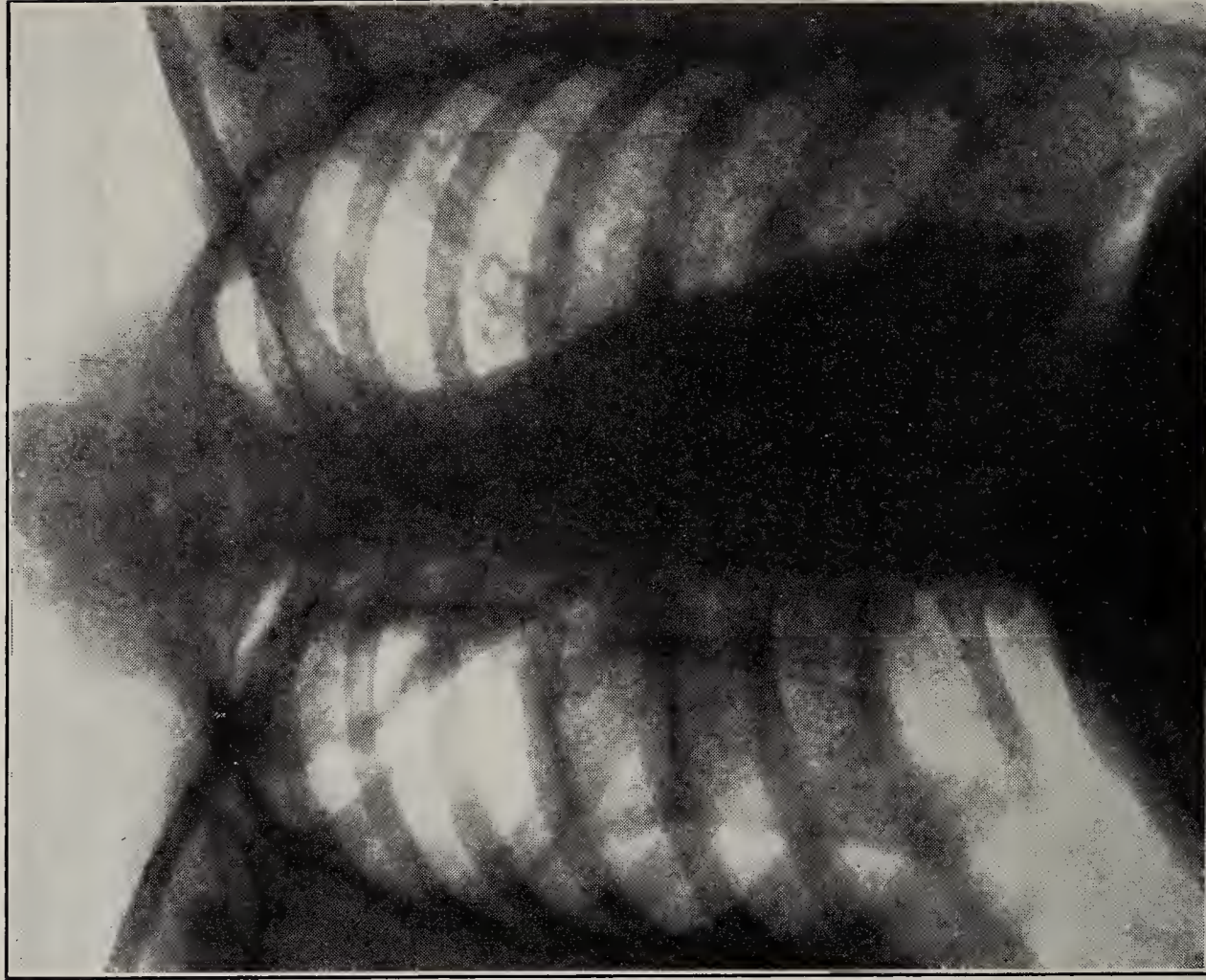


CASE I
FIG. 2—After Extrapleural Pneumothorax



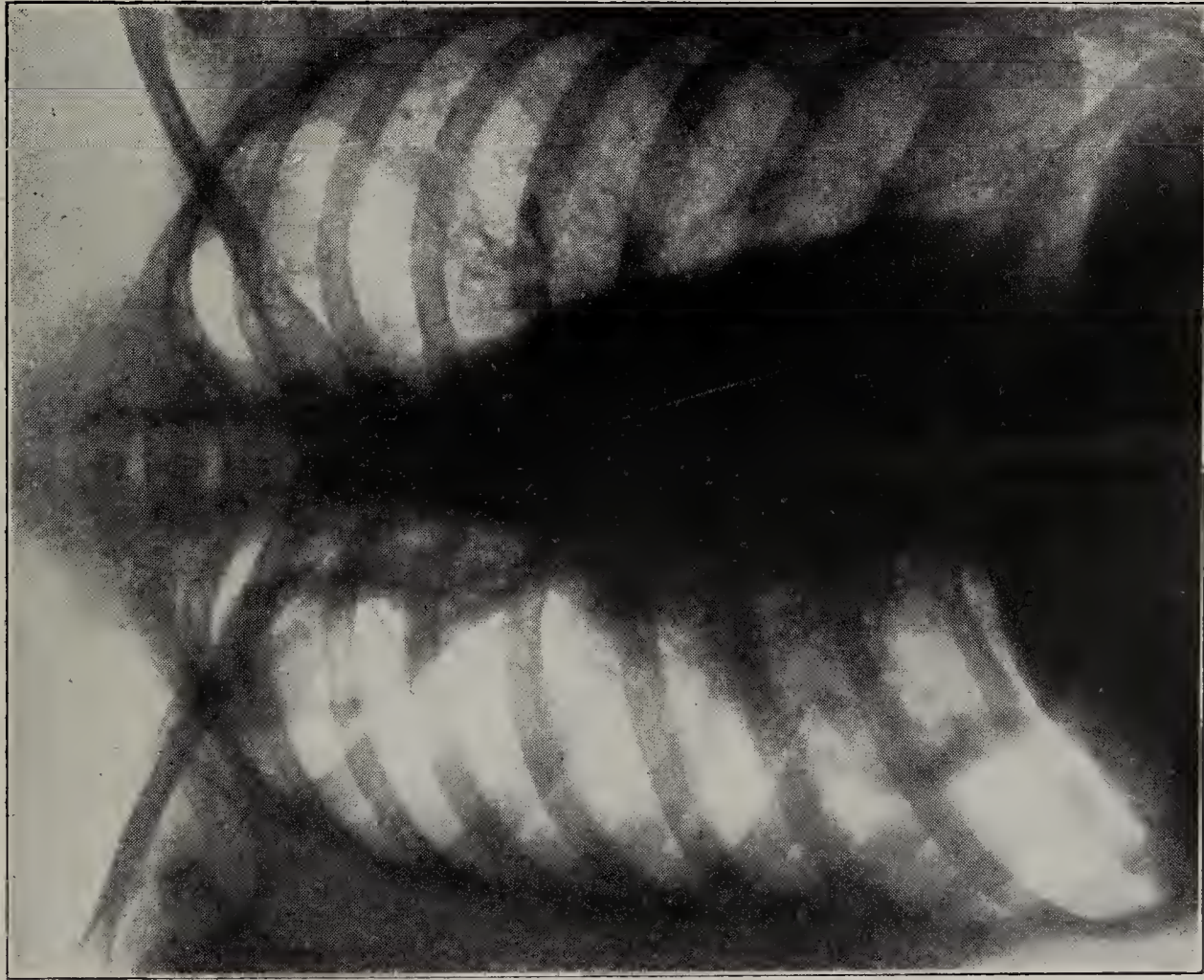
CASE II

FIG. 1.—Before Artificial Pneumothorax



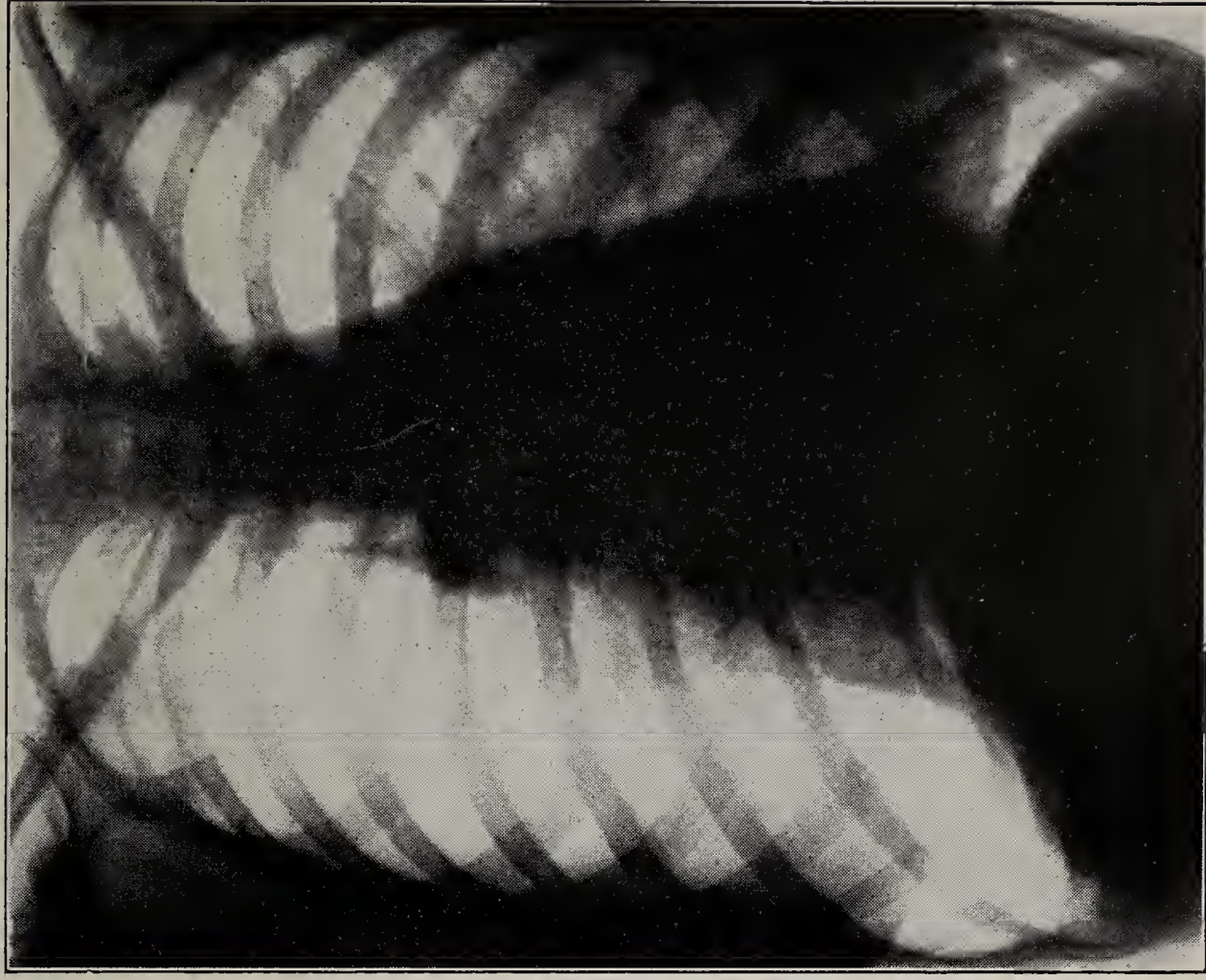
CASE II

FIG. 2.—After Artificial Pneumothorax, showing Adhesions



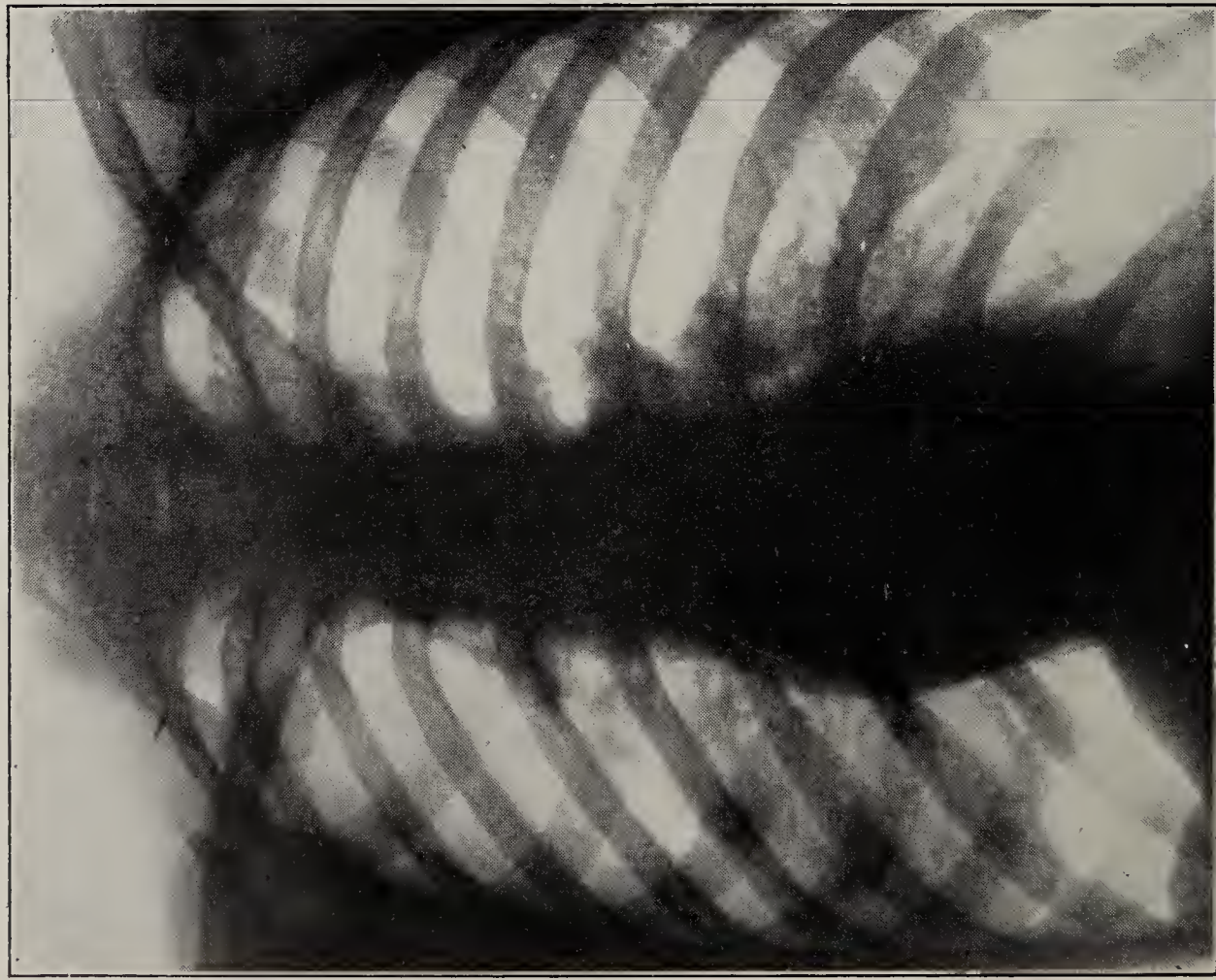
CASE II

FIG. 3.—After Cauterisation of Adhesions in Middle Zone ;
Apex not possible to divide

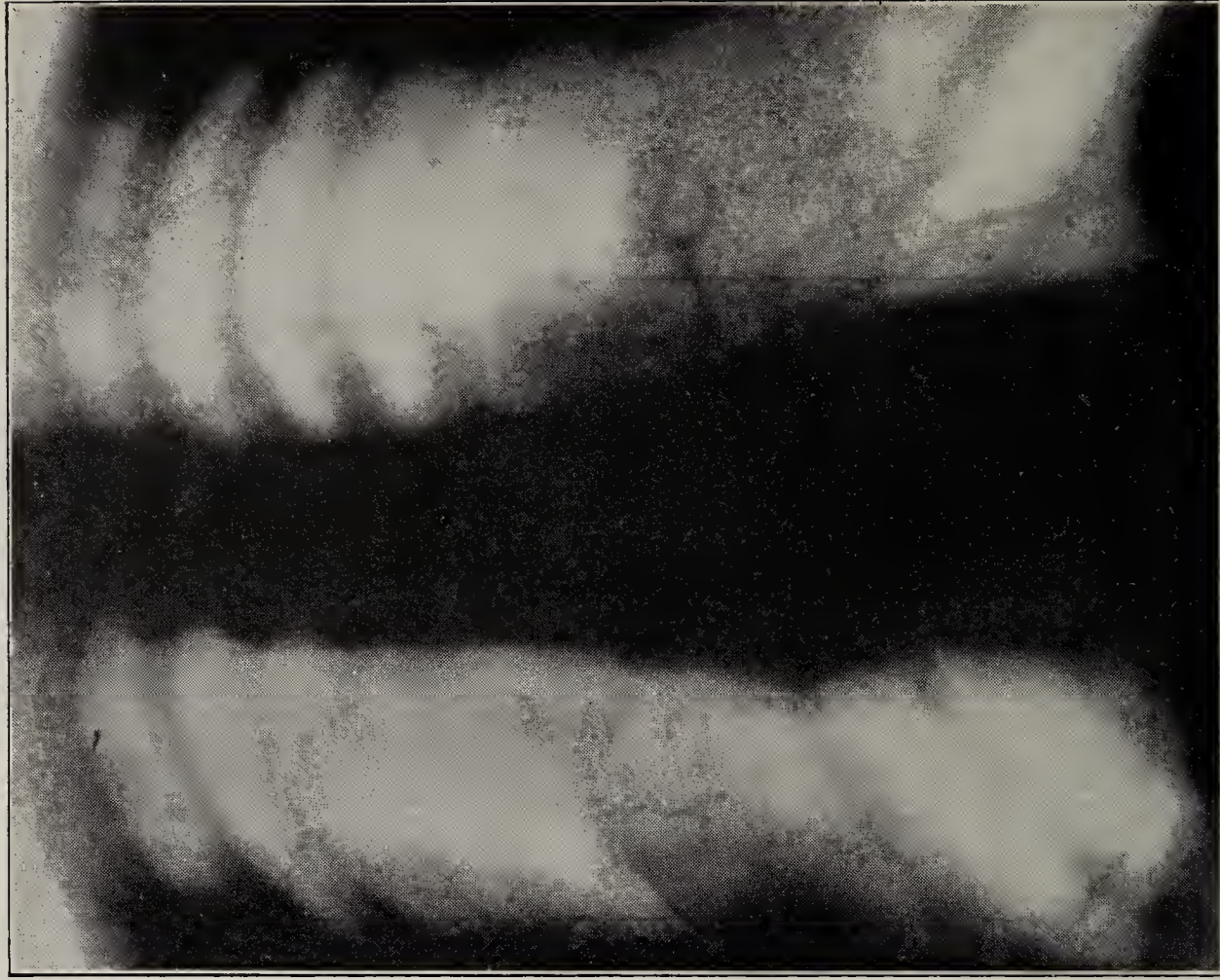


CASE II

FIG. 4.—Final Result after Extrapleural Pneumothorax, broken
into intrapleural on same day

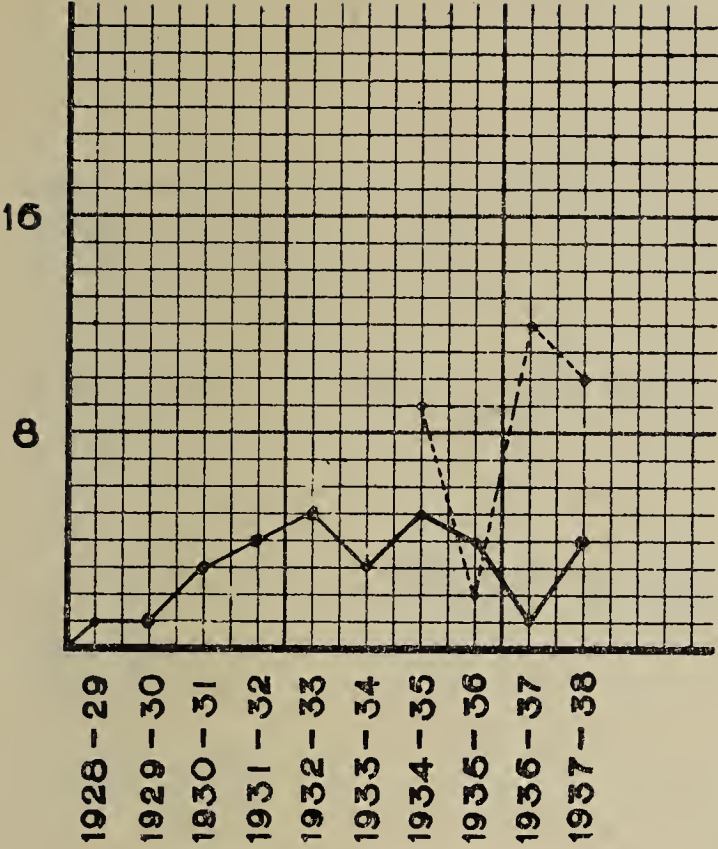


CASE III
FIG. 1.—Left lung—no visible Cavity



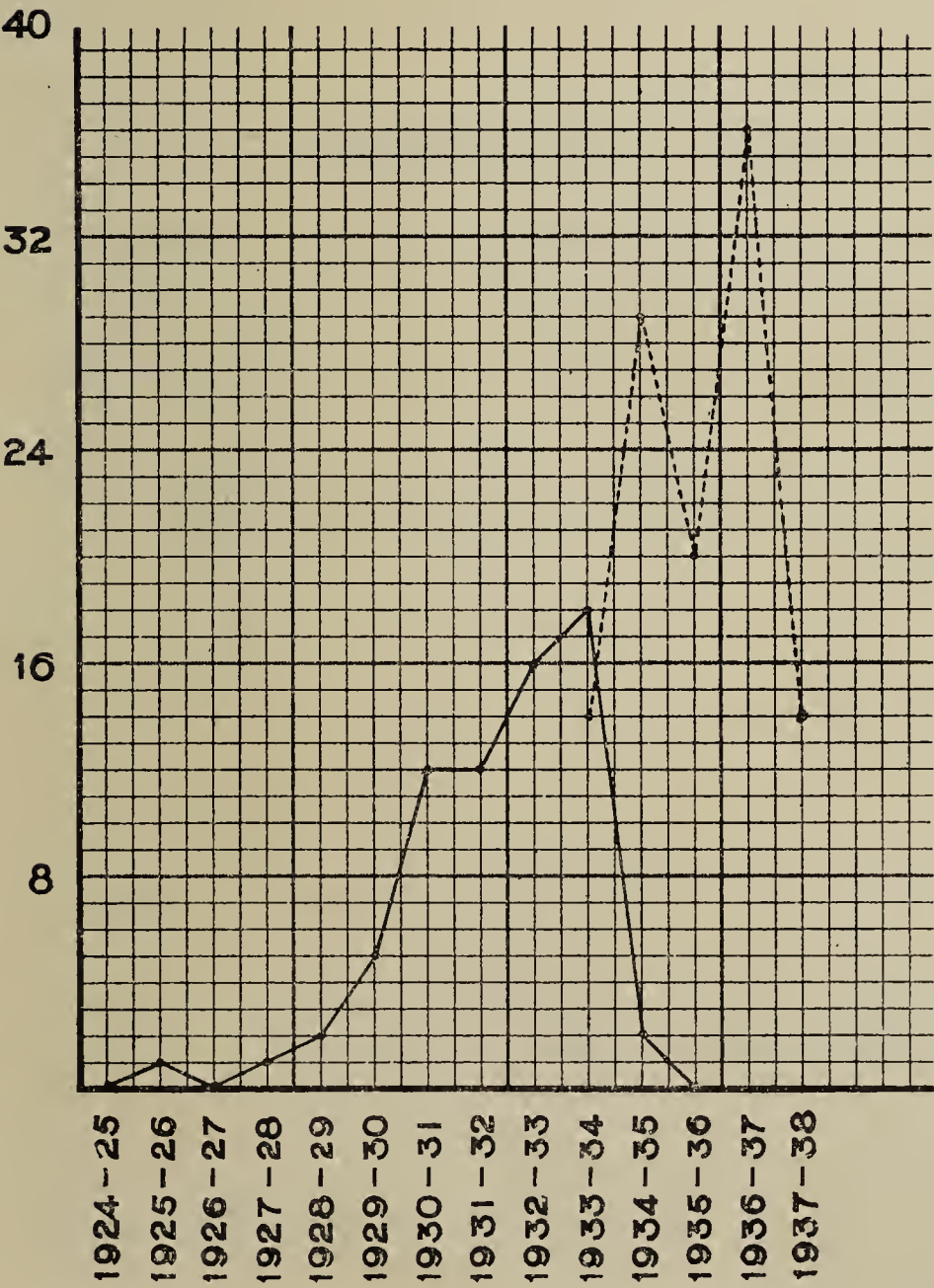
CASE III
FIG. 2.—Tomograph—Cavity in left Middle Zone

THORACOPLASTY
OPERATIONS



Cases operated on in the Sanatorium : -----

Cases discharged for operation : _____



PHRENIC
OPERATIONS

Cases operated on in the Sanatorium : -----

Cases discharged for operation : _____

X-RAY DEPARTMENT

The weekly average of routine pictures taken remains about 40, and special pictures are taken as required.

As mentioned in the last Report, a tomograph has been installed. It was built on the premises, and the results obtained have been very satisfactory. While not being required for the majority of cases, its value is unquestionable in certain difficult cases where the presence of a cavity is suspected. We reproduce pictures of a typical case (Case III).

The weekly screening, which we consider essential for the proper control of pneumothorax cases, continues as usual.

DENTAL DEPARTMENT

The following dental treatment has been carried out during the year :—

Fillings	...	...	...	...	...	...	196
Extractions	...	...	...	...	...	...	78
Scaling and Gum treatment	...	...	...	...	...	...	26
Dentures	...	...	...	...	...	...	5
Repairs	...	...	...	...	...	...	15

PATHOLOGICAL DEPARTMENT

The following routine examinations were carried out during the year :—

Sedimentation rates	...	...	...	...	2,047
Sputum examinations	...	...	...	...	1,916
Urine examinations	...	...	...	...	1,696
Pleural effusions	...	...	...	...	141
Throat swabs	...	...	...	...	45
Milk examinations	...	...	...	...	37
Water examinations	...	...	...	...	31
Blood counts	...	...	...	...	97
Miscellaneous	...	...	...	...	65
Cultures for tubercle bacillus	...	...	...	...	347
					6,422

The total represents an increase of 29 per cent over that of the previous year.

There have been 29 cases of effusions complicating artificial pneumothorax in which specimens have been removed. In 13 of these, or 45 per cent, tubercle bacilli were present on microscopical examination of the centrifuged deposit. In the remaining 16 specimens, cultures of the tubercle bacillus were found in 11, or 69 per cent. Therefore the bacillus was demonstrated in 24 of the 29 cases, or 83 per cent. Cultures were also made from the microscopically positive cases, and all the growths appeared to be of the human type.

It is, however, in the examination of sputa that cultural methods would appear to have their greatest use. Throughout the year, Jensen's Modification of Lowenstein's medium has been used. A N/1 solution of oxalic acid has been used to destroy the secondary contaminating organisms, as described in the last Annual Report.

A series of 197 sputa which were negative to microscopical examination were cultured. Positive growths were obtained in 37 of these, or 19 per cent. It should be explained that the majority of the negative specimens in this series are the first which have been produced by patients after a succession of positive microscopical results. In some of these "first negatives," it has been chastening to see the heavy growth produced, and has led to wider and longer searches before a specimen is passed as free from tubercle bacilli.

The disadvantage of cultural examinations is the length of time before growth is apparent, and work is now proceeding to discover the simplest methods of producing the optimum conditions. Novy and Soule have shown that a plentiful supply of oxygen is necessary for a luxuriant growth in a human strain. It is proposed to culture the bacillus from sputum, pleural effusions, etc., under varying concentrations of oxygen and carbon dioxide to discover which will give the quickest growth.

STATISTICAL DEPARTMENT

The work of the Statistical Department has been carried out on the same lines as in previous years.

The number of patients discharged from the Sanatorium up to date is 6,984. This number does not include Group IV cases, re-admissions, or patients who were in residence too short a time to be included in the records. Those about whom no information could be obtained number 389 or 5.6 per cent.

The statistics of the ultimate results of the enquiry are shown in the following tables :—

TABLE A3.—STATISTICS OF ULTIMATE RESULTS

Cases in the Sputum of which T.B. were demonstrated in the Sanatorium
Group II considered separately

Year of Dis- charge	Number Discharged	Number reported " Well " or " Alive " in each successive year after Discharge																										Number Dead in 1938	No. lost sight of in 1938		
		Number reported " Well " or " Alive " in each successive year after Discharge																													
		1908 -12	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937			1938	
1906/07	57	203	22	18	23	18	19	18	17	17	17	17	17	16	15	15	15	14	14	14	13	13	12	12	12	12	11	10	44	3	
1907/08	85	223	32	32	33	35	32	28	24	25	24	23	24	23	22	19	18	18	17	17	16	16	15	15	15	15	15	15	67	3	
1908/09	94	189	34	37	38	40	36	34	34	33	31	31	31	31	29	28	26	25	24	24	24	22	23	22	22	22	22	22	68	4	
1909/10	99	128	44	38	36	33	32	28	26	26	24	25	25	24	23	22	21	21	21	20	20	19	19	19	19	19	19	17	70	2	
1910/11	100	68	43	49	40	37	35	29	28	23	22	22	21	19	16	16	16	16	15	15	14	14	13	12	12	12	11	11	84	5	
1911/12	110	—	65	59	49	43	38	34	33	32	29	29	28	25	22	21	21	21	20	20	20	19	17	17	16	16	15	14	88	8	
1912/13	101	—	—	77	68	53	45	33	38	35	35	32	29	28	25	25	25	25	25	24	24	22	22	22	22	22	20	20	80	1	
1913/14	95	—	—	—	74	54	54	51	50	47	42	40	34	32	31	28	29	26	24	24	24	24	23	23	19	17	14	13	77	5	
1914/15	99	—	—	—	—	55	69	57	57	51	46	43	38	39	36	36	33	30	29	28	28	27	27	26	25	21	19	19	78	2	
1915/16	71	—	—	—	—	74	49	35	33	28	24	22	17	14	12	12	12	10	10	10	10	9	9	8	8	8	8	7	62	2	
1916/17	99	—	—	—	—	—	89	72	65	62	56	50	44	46	43	43	42	40	39	39	39	39	37	34	32	31	30	28	67	4	
1917/18	86	—	—	—	—	—	—	63	65	54	50	48	40	41	36	38	38	35	30	30	30	29	26	26	26	26	25	24	50	8	
1918/19	98	—	—	—	—	—	—	—	86	72	69	64	60	59	56	55	53	50	48	48	47	45	44	42	41	38	38	36	57	5	
1919/20	69	—	—	—	—	—	—	—	—	63	55	48	46	43	42	39	35	31	30	24	24	23	21	21	20	20	18	18	44	1	
1920/21	62	—	—	—	—	—	—	—	—	—	56	47	38	31	28	26	24	24	24	17	15	15	15	15	15	15	14	12	42	2	
1921/22	48	—	—	—	—	—	—	—	—	—	—	43	35	31	27	23	23	19	17	17	17	16	15	14	12	11	11	16	35	1	
1922/23	28	—	—	—	—	—	—	—	—	—	—	—	27	24	25	22	21	18	17	15	14	14	15	14	12	11	10	18	16	1	
1923/24	29	—	—	—	—	—	—	—	—	—	—	—	—	26	52	50	43	39	35	33	33	28	27	25	25	24	23	21	36	1	
1924/25	59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	42	40	38	35	35	33	31	31	28	26	25	24	23	23	2	
1925/26	46	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	66	63	61	60	59	56	53	46	45	41	39	26	—	—	
1926/27	69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	61	60	79	71	65	50	48	44	45	41	34	30	4	
1927/28	69	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	79	79	90	84	57	56	53	50	49	41	40	5	
1928/29	86	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	90	93	73	68	62	58	54	48	50	5	
1929/30	103	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	91	80	71	65	60	54	37	8	
1930/31	99	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	81	73	65	61	58	46	28	8	
1931/32	82	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	86	81	71	70	60	23	9	
1932/33	92	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	39	36	33	30	13	2	
1933/34	45	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	55	49	41	16	7	
1934/35	59	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	66	66	—	—	—
1935/36	73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	69	70	1	—	—
1936/37	71	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

TABLE A7.—STATISTICS OF ULTIMATE RESULTS

Cases in the Sputum of which T.B. were not demonstrated in the Sanatorium
Group II considered separately

Year of Dis-charge	Number Discharged	Number reported " Well " or " Alive " in each successive year after Discharge																										Number Dead in 1938	No. lost sight of in 1938	
		1908	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937			1938
1906/07	7	26	5	4	5	5	6	6	6	5	5	5	4	4	3	3	4	4	4	3	3	3	3	3	3	2	2	4	2	
1907/08	18	60	10	11	12	13	13	13	13	12	12	12	10	10	10	10	9	9	9	8	8	7	7	6	6	6	6	11	2	
1908/09	25	49	14	15	14	14	15	15	15	15	14	14	14	14	12	12	11	12	12	12	12	12	12	12	12	11	11	13	1	
1909/10	15	24	10	10	11	12	12	12	9	9	9	9	9	9	8	8	8	8	8	8	8	8	8	7	7	6	6	7	2	
1910/11	10	8	8	8	8	9	8	8	7	7	7	7	6	7	7	7	7	6	6	6	6	6	6	5	4	4	3	2	2	
1911/12	20	—	14	9	12	13	14	14	8	10	9	8	8	8	8	8	8	8	8	8	7	7	7	7	7	5	5	4	11	
1912/13	9	—	—	9	9	7	8	8	7	8	7	6	7	7	7	7	7	7	7	7	6	6	6	6	6	6	7	6	5	
1913/14	11	—	—	—	9	9	8	8	8	8	7	7	7	7	7	7	7	7	7	7	6	6	6	6	6	5	4	4	3	
1914/15	14	—	—	—	—	13	13	13	10	10	10	9	9	9	9	9	9	9	8	8	8	8	8	8	8	8	8	5	1	
1915/16	23	—	—	—	—	—	19	16	15	15	15	15	14	14	12	12	12	11	11	10	10	9	9	9	9	8	7	13	3	
1916/17	24	—	—	—	—	—	—	23	22	20	19	19	17	17	18	18	17	17	15	15	15	15	15	15	15	15	15	13	4	7
1917/18	59	—	—	—	—	—	—	—	55	51	50	48	48	47	47	47	45	43	61	62	61	57	57	52	50	49	48	44	7	11
1918/19	71	—	—	—	—	—	—	—	—	68	67	68	68	66	64	64	62	61	63	62	61	57	57	52	50	49	48	44	16	11
1919/20	20	—	—	—	—	—	—	—	—	20	20	20	20	20	18	19	19	19	18	18	17	17	17	16	16	15	14	13	5	2
1920/21	14	—	—	—	—	—	—	—	—	—	—	14	13	20	13	13	13	13	12	12	12	11	10	9	8	8	8	9	2	3
1921/22	28	—	—	—	—	—	—	—	—	—	—	28	26	8	27	27	26	25	22	21	21	20	19	19	18	18	16	15	8	5
1922/23	9	—	—	—	—	—	—	—	—	—	—	—	—	—	14	14	14	14	6	5	5	5	5	5	5	5	5	4	4	1
1923/24	15	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18	18	17	16	16	16	16	16	15	15	15	15	13	2	2
1924/25	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	18	17	16	16	16	16	16	15	15	15	15	13	3	2
1925/26	19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19	19	17	15	14	14	14	13	11	11	11	11	7	1
1926/27	11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	10	10	10	10	9	9	8	8	8	8	2	1	1
1927/28	18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17	17	15	14	14	14	12	12	11	11	6	1
1928/29	19	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	17	15	16	16	16	15	15	14	13	6	3
1929/30	14	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	12	12	12	12	10	10	10	9	15	1
1930/31	22	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	22	21	18	18	17	16	16	6	3
1931/32	27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26	22	22	21	21	21	6	2
1932/33	26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	26	24	24	21	3	2
1933/34	40	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	40	37	37	34	4	2
1934/35	50	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	50	50	43	5	2
1935/36	43	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	43	39	1	3
1936/37	49	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	43	45	4	—

TABLE A8.—STATISTICS OF ULTIMATE RESULTS

Cases in the Sputum of which T.B. were not demonstrated in the Sanatorium

Group III considered separately

[illegible]

Group	Improved	8995	218—	39—	—9—	—131	110—	681	2141	37—	197	176	165	166	128	114	127	121	118	155	134	125	141	100	118	115	103	22—	Alive Dead Lost sight of
		3963	219—	—18—	220—	113—	1111	—92	17—	—2—	—1—	—1—	—1—	—1—	—1—	112—	33—	481	—13—	213—	315—	8163	782	462	13—	11—	31—	11—	Alive Dead Lost sight of
Group III	Disease Arrested	—4—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	—1—	1—	Alive Dead Lost sight of
	Much Improved	2652	—6—	36—	1191	6171	6271	7272	12352	8282	729—	6562	11541	12541	29—	29—	29—	12—	29—	29—	—2—	—2—	—2—	—2—	—2—	—2—	—2—	3—	Alive Dead Lost sight of
Group III	Improved	31072	—11—	—10—	217—	113—	—26—	—21—	1201	5321	436—	422—	125—	—31—	527—	428—	6131	310—	26—	15—	—2—	—2—	—2—	—2—	—2—	—2—	—2—	95—	Alive Dead Lost sight of
	Stationary or Worse	1168—	1241	241—	332—	—28—	325—	1241	—181	—19—	—8—	—5—	29—	—9—	—10—	112—	—102	—141	—1—	261	110—	19—	3192	1192	811—	47—	66—	34—	Alive Dead Lost sight of
Group III	Summary	16991242	271312	251457	311584	191296	491576	4213012	5713110	541375	561347	361364	421212	401224	38864	41703	63559	50638	54595	707510	685511	65528	794715	57394	79372	9619—	9310—	Alive Dead Lost sight of	
	Total	1123	160	177	193	154	212	184	198	196	197	176	165	166	128	114	127	121	118	155	134	125	141	100	118	115	103		

[illegible]

